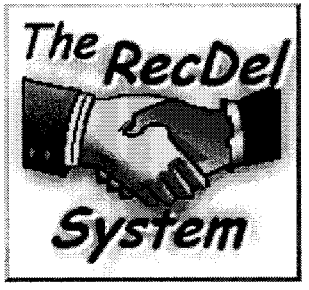

A Planning Revolution

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The research described in this presentation was carried out by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

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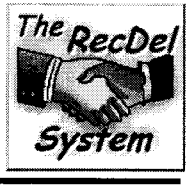
Agenda



- Project Planning & Control
- The Distributed Planning Process
- Distributed Planning vs. Centralized Planning
- Tool for Distributed Planning
- Summary

Project Planning & Control

- Schedule work
- Manage key interfaces and product development
- Monitor progress towards milestones & completion of products
- Manage resources
- Manage risk

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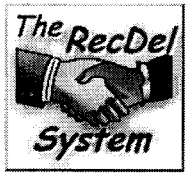
Agenda



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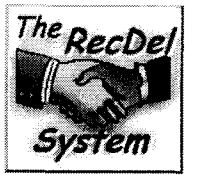
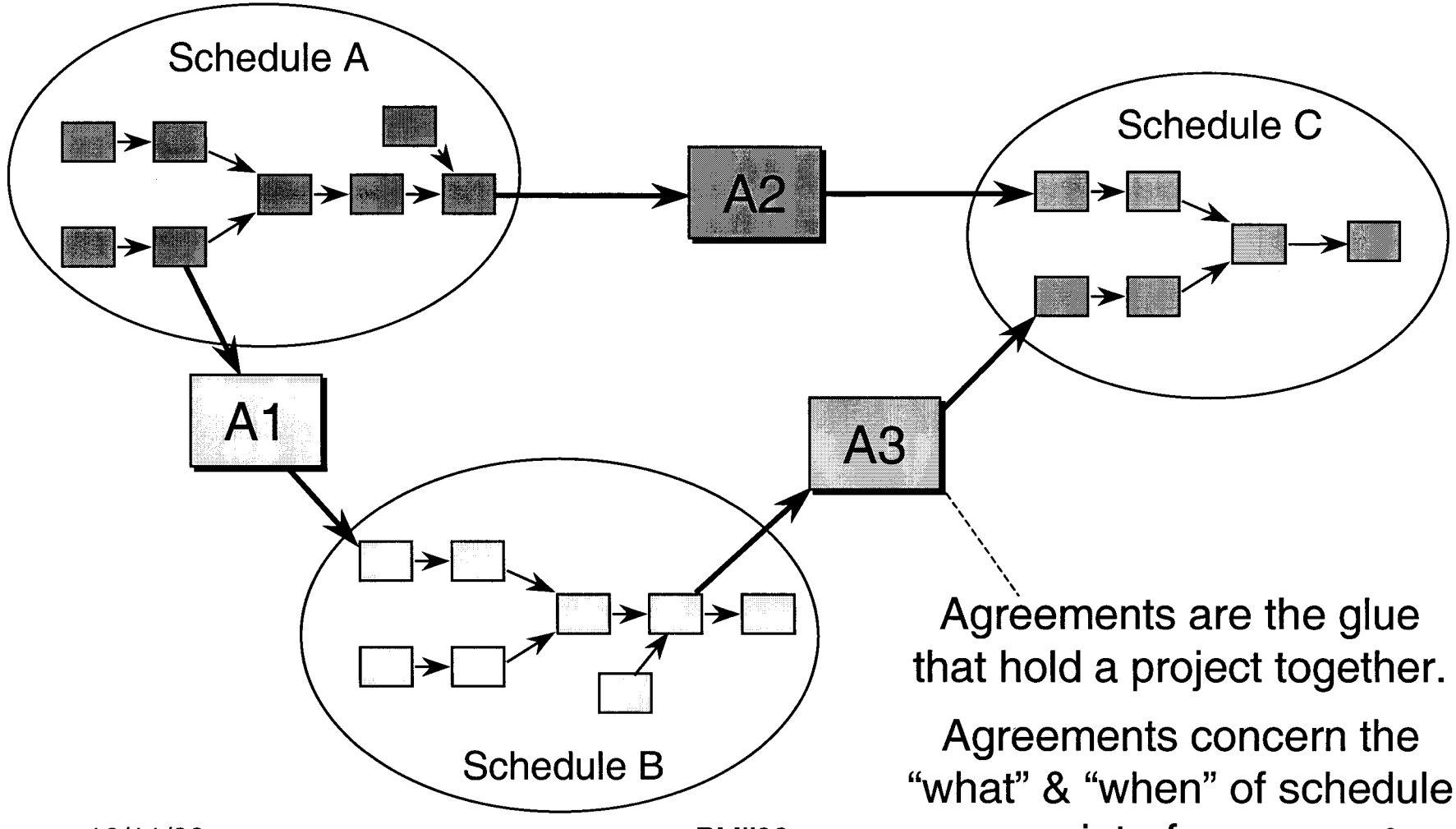
JPL Distributed Planning Process



- Ownership and responsibility of plans remain with the Cognizant Individuals (Cog-Is)
- Process is product-oriented
- Individual's plans and schedules are **not** micro-managed by the Project
  - Only agreements on deliverables between work packages are managed, not entire schedules
    - Deliverables are H/W, S/W, Data, Docs, Decisions, etc.

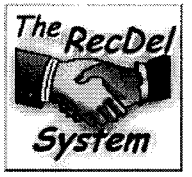
JPL Manage Schedule Interface Agreements



Agreements are the glue that hold a project together.

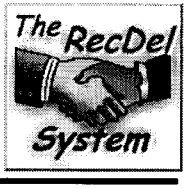
Agreements concern the "what" & "when" of schedule interfaces.

Distributed Planning--How to...



- Remove centralized scheduling staff
- Make Cog-Is responsible for:
  - maintaining schedules
  - negotiating interim deliverables with other Cog-Is
  - establishing agreements
- Use metrics based on these interim deliverables
- Don't integrate schedules into large, unmanageable networks

Agenda



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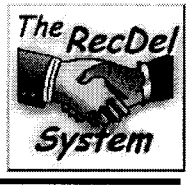
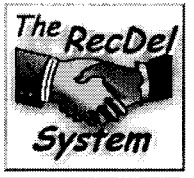
Problems with Centralized



- The cost of the central scheduling staff itself
- Diluting the responsibility for planning each task between Cog-I and scheduling staff adds confusion about accountability

Advantages of Distributed



- Much lower staffing cost
- Responsibility stays clearly in hands of Cog-Is
- **Performance is measured objectively by product delivery, not subjectively by progress of activity**

Why Not Distributed Planning?

- Lack of tools to manage agreements
- Lack of understanding, especially by Cog-Is
  - Think they'll inherit more work instead having control over their own work
  - Actually eliminates double bookkeeping and confusion of Cog-I's schedule and central schedule
- Change is difficult; entrenched in old ways

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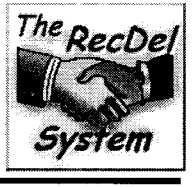

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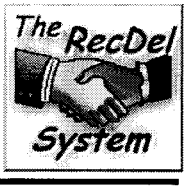
JPL Distributed Planning Tool



- *The RecDel* System* has been created at JPL
  - Web-based
  - Intuitive user interface
  - Immediate report capability
    - Includes Metric Reports
- Has been used successfully by such projects as the Cassini Mission to Saturn
  - Delivered on time
  - Built under budget

*RecDel = Receivable / Deliverable

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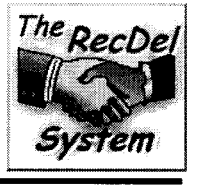
System Purpose



- Maintain details of schedule interface agreements not easily maintained with network schedules
- Provide immediate reporting capabilities for users
- Facilitate & track negotiations of RecDels
- Allow the Cog-Is to retain “ownership” of their RecDels and schedules
- Accommodate changes to plans.

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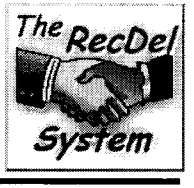
Key Elements



- The RecDel itself (product-oriented)
  - RecDels are negotiated products--deliverables--between work packages (task elements) of a Project
    - Product definitions are negotiated, then agreed upon
    - Delivery dates are negotiated, then agreed upon
- The Cog-Is of task elements (distributed)
  - Cog-Is are the Receivers and Deliverers of the RecDels
  - Maintain ownership of their plans
  - *The RecDel System* empowers Receivers and Deliverers to work together to negotiate their schedule interfaces
  - Only Receiver of RecDel authorized to status delivery as received

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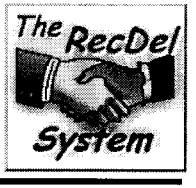
System Fundamentals



The RecDel System provides Receivers and Deliverers with a tool to initiate, agree to and close RecDels.

- Either party can initiate a RecDel
- A RecDel is "Reconciled" only when both parties agree to:
  - The product definition
  - The delivery date
- RecDels can be statused by only Receivers as either:
  - completed
  - undelivered

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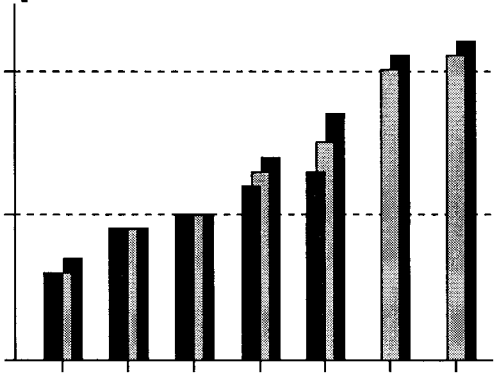
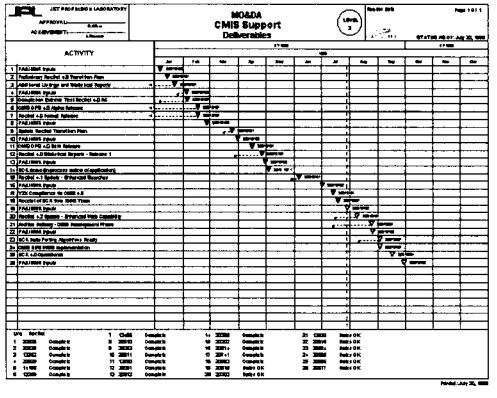
Report Features

The RecDel System

- Reports enable Project managers and Cog-Is to monitor and assess progress
  - Planned vs Actual metrics
  - Critical RecDel reports
  - Gantt Charts
  - etc.





- Project staff quickly and easily determines whether delivery obligations are met

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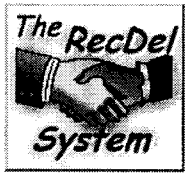
System Features



- Sends Receivers, Deliverers and Managers automated e-mail notification of:
  - RecDel changes
  - RecDels coming due and past due
  - RecDels in need of statusing
- System can be customized on many parameters to meet projects' needs
  - Work Breakdown Structure
  - Timing of automated e-mail notifications
  - etc.

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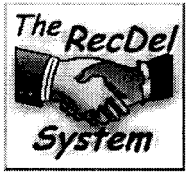
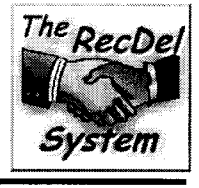
Time-Saving Features



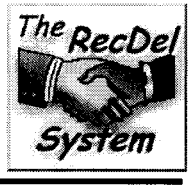
- Contact information provided for both parties involved in a RecDel allows Cog-Is to quickly discuss RecDels
  - Displays phone numbers
  - Has *mailto:* link on name for e-mail connection
- Convenient bookmarking of data & reports

JPL System / Process Benefits



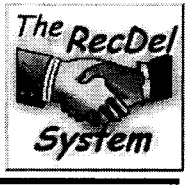
- Minimizes time needed to establish schedule baseline
- Eliminates time delay between statusing and reporting
- Encourages good planning techniques
- Facilitates communication on distributed projects
- Provides visibility to progress at all levels

Further Development Needed



- Tie in with:
  - Financial systems
    - Earned Value system
  - Desktop network scheduling tool such as MS Project
- Dependency information
  - critical path
  - float (currently available, but not reported)

Agenda



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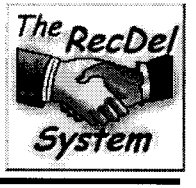
Summary

- Distributed Planning involves managing interfaces
  - As agreements
  - Not unilateral dictates
- *The RecDel System* provides environment
  - Manage schedule interfaces
  - Accommodate change
- For more information visit our website
  - **http://recdel.jpl.nasa.gov/**

System Software Application



- The RecDel System is a web application available world wide and can be accessed by:
  - PCs
  - Macs
  - Unix
- The RecDel System uses Secure Sockets Layer for added security
- The RecDel System utilizes
  - Database server
  - Application server
  - Web server
- The RecDel System is a distributed, object-based, multi-tiered application

Example of E-mail Reminder to the Deliverer